PLANT NOTES FROM THE SIERRA JUAREZ OF BAJA CALIFORNIA, MEXICO

Reid Moran
Natural History Museum, San Diego, California 92112

The Sierra Juárez is a range extending from the United States boundary about 160 km (100 miles) south-southeast in Baja California, to San Matias Pass. It is fairly uniform in height, with several scattered summits at between 1900 and 2000 meters; it has a nearly straight eastern escarpment, dropping away to the desert just above sea level; and it slopes more gently to the west, where there is no obvious lower limit.

In the northern two-thirds of the range, higher parts are largely granitic and largely forested with Pinus jeffreyi Grev. & Balf. and Quercus peninsularis Trel., with P. quadrifolia Parl., P. monophylla Torr. & Frem., and Juniperus californicus Carr. in slightly lower and drier areas, and with chaparral below on the west slope. This northern part has ranches and mines and hence roads and so has been fairly accessible. It was visited in 1875 by Edward Palmer and George W. Dunn, in 1882 by C. G. Pringle, in 1888 by J. G. and Sara Lemmon, and more recently by various botanists. However, it was explored especially by Charles Russell Orcutt, who made at least nine trips at various seasons between 1882 and 1890 and perhaps some later. His personal herbarium, still unmounted, is with the Dudley Herbarium, now at the California Academy of Sciences; and his duplicates, to judge from cited specimens, were widely distributed and are especially well represented at the Gray Herbarium, the Missouri Botanical Garden, and the U. S. National Herbarium. He evidently was a sharp-eyed collector, for several species still are known from Baja California from his collections and few or no others.

The southern third of the Sierra, largely capped with volcanics, is comparatively dry, the upper slopes with piñons, junipers, and chaparral, but with no large trees southward much beyond Santa Catarina. There are few ranches except well west of the crest and few roads. Of the early botanists, apparently only Orcutt got as far south as Santa Catarina (Santa Catalina). In June 1905 E. W. Nelson and E. A. Goldman collected from Ensenada to Ojos Negros, Alamo, and Valle Trinidad, and on south; but no botanist got high in the southern part of the mountains.

At various seasons from 1960 to 1962, Richard E. Broder collected over 500 numbers about Santa Catarina at elevations between 1000 and 1600 meters. He compiled an annotated list of 301 species of vascular plants, with notes on the topography, climate, and vegetation (Broder, 1963); but this was not published. His collections include several species for which I find no published records from Baja California. I have since visited the area and re-collected some of these; and I have examined those of Broder's specimens cited below (UCSB).

Portezuelo de Jamau is a 1300-meter pass about 21 km (13 miles) east-southeast of Santa Catarina, crossed by a road built during World War II but now little used (Gerhard and Gulick, 1970). This pass is the best place from which to reach some of the higher peaks in the southern part of the Sierra. I went there in May 1963, October 1966, May 1967, October 1971, May 1973, April 1974, and May 1976, on the last four trips climbing well up to the south and southeast, twice to Cerro Jamau, shown on one map at 1905 meters.

There is no published flora for the Sierra Juárez or for any other part of northwest Baja California. Standley (1920-1926) covered the woody plants then known from Baja California. Shreve and (especially) Wiggins (1964) treated the desert plants of the peninsula, and Hastings, Turner, and Warren (1972) mapped in detail the ranges of 238 of the desert plants; but much of the Sierra Juárez is above the limits of the Sonoran Desert as defined by these authors. Otherwise, records for the Sierra Juárez are widely scattered, in travel accounts, monographs, and descriptions of new species. The Californian floras often include Baja California in statements of extralimital range but of course rarely give information more specific than "northern Lower California".

This paper reports collections made mainly about Portezuelo de Jamau but also elsewhere in the Sierra, including several by Broder and others. Plants listed are mostly those whose occurrence in the Sierra is little known or previously unknown. Twenty of these seem not to have been reported from Baja California and seven not from Mexico, though some were known so close to the boundary that the extension is scarcely surprising. One of them, when published recently, was a new record for the universe, though this again is scarcely surprising. A few records are included as the southernmost, northernmost, or highest known to me.

Of the 40 plants listed, Broder included 8 in his unpublished report (1963), some under different names; and Hastings et al. (1972) have already mapped three, for which the specimens are first cited here. Otherwise, I have found no records except as noted. Also, I have looked for most of these species in the herbaria at the California Academy of Sciences, the Rancho Santa Ana Botanic Garden, Stanford University, and the University of California at Berkeley. However, it is quite probable that other herbaria include some collections of some species listed.

Southward in Baja California one finds more and more plants that occur also in Arizona but not in Alta California. This pattern may be seen in the maps for various desert plants (Hastings et al., 1972): it may result in part from greater summer rainfall southward, as in Arizona deserts, compared to practically none in the deserts of Alta California. Eight of these plants are included here; four of them are not known farther south and so are known in Baja California only in the Sierra Juárez.

In the following list, collections are arranged generally from north to south and from west to east. "M" preceding field numbers is for mine; the first set of my specimens is at San Diego (SD). The first set of Broder's specimens is at the University of California at Santa Barbara (UCSB). A few other specimens in these two herbaria are cited with these abbreviations.

Noteworthy Collections

PINUS COULTERI D. Don. Common with P. jeffreyi at 1700 m, La Sierrita, NW of Laguna Hanson, M23707; in chaparral near south edge of Mesa Huicual, 1650 m, M23583; one seedling and one cone in arroyo, south rim of Cañada el Rincón, 1450 m, M23630 (trees seen higher and farther west along south rim presumably the same species).

Critchfield and Little (1966: map 55) showed three areas for P. coulteri in Baja California: (1) a dot for the large stand on Cerro Blanco or Guadalupe Mountain, (2) three marks for isolated occurrences in the northern Sierra San Pedro Mártir, and (3) a solid area ca. 30 km long in the vicinity of Laguna Hanson in the Sierra Juárez. Dr. Critchfield writes that he knows no basis for this third record beyond Nelson and Goldman. Goldman (1916) mentioned P. coulteri as occurring with P. jeffreyi on the top of the Sierra del Pinal; Nelson (1921) substituted the name "Sierra Juárez", saying that the northern half of this range was known locally as Sierra del Pinal. Since their camp was at Laguna Hanson, quite possibly they saw P. coulteri near where I did. I have not seen it elsewhere in the northern part of the Sierra, and local foresters seem to know of no other stands. I therefore doubt that the large area on Critchfield and Little's map is justified.

My other two localities are on the north and south rims of Cañada el Rincón, 8-10 km ENE of Santa Catarina, and thus well south of the area shown by Critchfield and Little. At Mesa Huicual the cones are small for the species, many being less than 20 cm and some less than 15 cm long. Here P. jeffreyi occurs only in the bottom of the Cañada, straggling down to the vicinity of El Rincón, at about 1200 meters.

CUPRESSUS ARIZONICA var. STEPHENSONII (C.B. Wolf) Little. Mesa Huicual, 1650 m, M23585; dry wash 3.6 miles NE of Santa Catarina, 4000 feet, Broder 352A; Mesa Laguna Seca, 1450 m, M23624; scattered along arroyo from 2 km below to 5 km above El Rincón, 1175-1300 m, M21153, 21155, 21249, 21251, 23580; arroyo 2 miles east of Santa Catarina, R.& I.Marin M72-3a (SD) Previously reported only from the type area, on the west slope of Cuyamaca Peak, San Diego County, California, at ca. 1000-1750 m. A vaquero from Santa Catarina told me the cypress occurs also in the next cañada south of El Rincón.

Broder (1963) reported two young trees 30 feet tall below El Rincón, at 3800 feet, and two mature trees 40 feet tall and 4 feet in trunk diameter in a canyon above El Rincón, at 4800 feet. On Mesa Huicual, where the cypress grows in chaparral and so is subject to occasional fires, I noted only small trees. In flat silty valleys with Artemisia tridentata, both in the north fork of Cañada el Rincón and on Mesa Laguna Seca, it becomes a larger tree: I noted several about 10 m tall, with trunks ca. 1 m thick at the base, though tapering rapidly with the departure of the thick and rather close-set lower branches. The largest tree I saw is in the arroyo 3 km above El Rincón: it is about 10 m tall and 15 m wide, with a trunk 5.4 m in girth (M21251).

Trees in the type area are described as to 16 m tall and 10 m wide but with a trunk diameter only up to 7 dm. However, in 1958 I measured a burned stump there about 1 by 2 m thick. The trees in the forest at Cuyamaca are doubtless more subject to fire damage than are those of the flat valleys and those scattered along the arroyo in rather open scrubby vegetation, near El Rincón.

MIRABILIS PUMILUS (Standl.) Standl. Occasional on metamorphics ca. 4 and 6 km E of Rancho San Pedro, ca. 1600 m, M13459, 18526. No report seen for Mexico; otherwise, southern California to Utah and New Mexico.

STEGNOSPERMA HALIMIFOLIUM Benth. Arroyo Grande, 535 m, M21488. No report seen for the Sierra Juárez; otherwise Sonora and NE Baja California to southern Baja California.

LEWISIA BRACHYCALYX Engelm. Ca. 10 miles N of Laguna Hanson, E.B.Higgins in 1951 (SD); Laguna Hanson, E.Sprague in 1938 (SD). No report seen for Mexico; otherwise, southern California to Utah and New Mexico.

PORTULACA SUFFRUTESCENS Engelm. Locally common ca. 2 km W of Portezuelo de Jamau, 1275 m, M18636. No record seen for northern Baja California; otherwise, Arizona to Arkansas, Sonora, and the Cape region of Baja California.

Flowers and capsules in this collection are small: sepals 2.5-3 mm long at anthesis and petals 5 mm long; capsules 2-3 mm wide. They are rarely as small in individual specimens from elsewhere; but there is reason to wonder if they are uniformly so in other known populations.

ANEMONE TUBEROSA Rydb. Rocky canyon walls above 4500 feet, Broder 743; scarce on open north slope 5 km NE of El Rincón, 1250 m, M21255; fairly common locally on rocky slope, Cerro el Saiz, 1750 m, M20962. No report seen for Mexico; otherwise, southern California to Utah and Texas. However, the species is represented (SD) also from eight other localities in Baja California, scattered south to Volcán las Tres Vírgenes, at elevations of 875 to 1675 m.

MYOSURUS CUPULATUS S.Wats. West-facing rocky canyon wall 2-3 miles upstream from El Rincón, 4300 feet, Broder 745; north slope 5 km NE of El Rincón, 1375 m, M21262. No report seen for Baja California; otherwise, SE California to New Mexico and northern Sonora.

CORYDALIS AUREA Willd. Scarce and local on gravelly N slope just below summit of Cerro Jamau, 1890 m, M23253. No report seen for Baja California; otherwise, Alaska to Quebec, NE California, Texas, and northern Mexico.

PHILADELPHUS MICROPHYLLUS ssp. STRAMINEUS (Rydb.) C.L. Hitchc. E and N slopes of Cerro Jamau, 1875 m, M21229, 23255. Known at ca. 2000 to 2800 m in the Sierra San Pedro Mártir, but no report seen for the Sierra Juárez.

HOLODISCUS DUMOSUS (Nutt.) Heller, sens. lat. Few seen, on north-facing volcanic cliff, N. slope of Cerro la Parra, 1740 m, M23659; not seen elsewhere.

Authors differ widely as to the species of Holodiscus. Ley (1943) recognized five for western North America to northern Mexico and three others farther south. She separated H. microphyllus Rydb. as a montane shrub having obovate to spatulate leaves rarely 2 cm long and mostly toothed only above the middle, with a variety sericeus Ley having the leaves villous above and densely white silky beneath. To this variety she referred two collections from the high Sierra San Pedro Mártir, the only ones she cited from Baja California. Recent collections show that in the San Pedro Mártir, where the plant grows mostly above 2400 m, leafblades may be elliptic to ovate and toothed to below the middle, they may be 4 cm long, and they vary in degree of silkiness beneath. On the assumption that all collections belong in one entity, H. microphyllus does not seem separable in Baja California; and I return to a more conservative treatment, as others have done elsewhere (e.g. Hitchcock and Cronquist, 1961).

The lone collection from the Sierra Juárez is from a much lower elevation. Leafblades are mostly elliptic and toothed to below the middle, they may be 3 cm long, and they are villous but not densely silky beneath.

ACACIA CONSTRICTA Benth. 3 miles SE of Vinato Romero, 3500 feet, *Broder 356*, *357*; locally common 3 km NE of El Alamito, 1150 m, *M18638* (Hastings et al., 1972: 5); upper SE drainage of Arroyo Grande, 1100 m, *M21475*. No previous report seen for northern Baja California; otherwise, Arizona to South Carolina and South America.

ACACIA sp. aff. A. NEOVERNICOSA Isely. With *A. constricta* Benth. on gravelly flat in upper SE drainage of Arroyo Grande, 1100 m, *M21473*. This plant is similar in most respects to *A. neovernicosa* but is hirtellous and has pods about twice as wide and covered with stout subsessile to short-stipitate glands. Dr. Velva Rudd has this group under study.

ASTRAGALUS MORANII Barneby. Rather scarce, granitic soil in opening in chaparral, steep N slope of Cerro la Parra, 1600 m, *M23655*; fairly common in semi-shade, edge of flat silty valley with *Pinus jeffreyi* and *Artemisia tridentata*, north fork of Cañada el Rincón, 1440 m, *M23598*; scarce on open volcanic N slope of Cerro Saiz, 1600 m, *M23252*; few in barren gravelly arroyo bed 2 1/2 km NW of Cerro Jamau, 1450 m, *M23275*; near summit of Cerro Jamau, 1900 m, *M21231* (type), *23268*; common in open areas, chaparral with scattered *Juniperus californica* and *Pinus quadrifolia*, Cerro Taraizo, 1650 m, *M22987*.

In the original publication, Barneby (1976) cited only the type collection. More recent collections show a range of some 50 km in the southernmost part of the Sierra Juárez.

MIMOSA BIUNCIFERA Benth. SE slope of Cerro Prieto, 1650 m, *M18114*; in open chaparral at N base of Cerro la Parra, 1500 m, *M23674*; along dry arroyo, Cañada el Rincón, 1300 m, *M23582*; Portezuelo de Jamau, 1300 m, and 2 km W, *M13676*, *18631*; El Alamito, 1175 m, *M18646* (Hastings et al., 1972: 142). No previous record seen for Baja California; otherwise, Arizona to Texas and northern Mexico.

PSORALEA CALIFORNICA S.Wats. 5 km SSW of La Rumerosa, 1285 m, *M21295*; SE of El Progreso, 1450 m, *M21280*; Pino Solo, 1150 m, *M20976*; NW of El Rodeo, 1100 m, *M21220*; 2 km E of El Alamo, 1090 m, *M17741*; 3 km SW of La Poza, 1075 m, *M17740*; 2 km NE of Rancho el Florido, 1240 m, *M17723*. Reported by Vail (1894) from Japá, 20 km S of the U.S. boundary. Also in the foothills of the Sierra San Pedro Mártir: Llano el Conejo, 1275 m, *M23067*; SW of San Isidoro, 1190 m, *M22346*.

EUPHORBIA HYSSOPIFOLIA L. Scarce, in arroyo SW of El Alamito, 1075 m, *M18594*. No report seen for Baja California; otherwise, Arizona to South Carolina and South America.

EUPHORBIA REVOLUTA Engelm. Portezuelo de Jamau, 1300 m, M13666; peak 3 km SE of Portezuelo de Jamau, 1750 m, M18603. No report seen for Baja California; otherwise, SE California to Colorado, New Mexico, and Chihuahua.

EUPHORBIA TOMENTULOSA Benth. East side of range 9 km S of Guadalupe Canyon, 400 m, M19242. Farther N than shown by Hastings et al. (1972: 106).

ABUTILON PARVULUM A. Gray. 8 km SE of Las Filipenas, 1620 m, M9839; Portezuelo de Jamau, 1300 m, M13641; Rancho Alamito, 1175 m, M13695, 23249. No report seen for Baja California; otherwise, SE California to Colorado and Sonora. Three specimens of this and one of the following species were checked by Paul A. Fryxell.

ABUTILON PRINGLEI Hochr. East side of range 9 km S of Guadalupe Canyon, 400 m, M19233; foot of grade E of Portezuelo de Jamau, 1000 m, M18626. No report seen for northern Baja California; otherwise, Arizona to southern Baja California and Oaxaca. Also Arroyo el Cajón, Sierra San Pedro Mártir, 800 m, M21563.

FREMONTODENDRON CALIFORNICUM (Torr.) Cov. ssp. CALIFORNICUM. Several on lower slope of pluton SE of El Progreso, 1450 m, M21279. Known at ca. 1100 to 1600 m in the Sierra San Pedro Mártir, but no report seen for the Sierra Juárez.

LOPHOCEREUS SCHOTTII (Engelm.) Britt. & Rose. Cañón de los Torrentos, 34 km S of U.S. boundary, 300 m, R.Vinton in 1972 (SD); B.& B.Mackintosh, A.Kuebler in 1973 (SD). Northernmost known station (Hastings et al., 1972: 135). Henderson (1947) illustrated this plant and mentioned the occurrence of "senita (old man) cactus" in this canyon; and friends collected it for me.

CYMOPTERUS MULTINERVATUS (Coult. & Rose) Tidestrom. 38 miles E of Tecate, 4450 feet, B.Haines 160 (UCSB); El Topo, 1500 m, P.E.Popejoy in 1952 (det. by M.Mathias & L.Constance; SD); Jeffrey pine forest 5 km SE of San Pedro, 1700 m, M22054; NE of Santa Catarina, 3700 feet, Broder 614; 3 miles W of Santa Catarina, 3755 feet, Broder 644. Also, rocky E slope of Cerro Matomí, 1400 m, M20816. No report seen for Baja California; otherwise, SE California to Idaho, Arizona, and northern Sonora.

LOMATIUM MOHAVENSE ssp. LONGILOBUM Theobald. 5 km SSE of Portezuelo de Jamau, 1600 m, M20951, 21242 (det. L. Constance); W ridge of Cerro Jamau, 1850 m, M23271. Reported by Theobald (1966) only as far south as the vicinity of La Rumerosa. Although he described the fruit as pubescent to glabrate, here even the young ovary is glabrous.

SANICULA DESERTICOLA C.R.Bell. Rocky E slope 3.5 km NE of El Rincón, 1225 m, M21252; gentle open N slope 5 km NE of El Rincón, 1250 m, M21254; volcanic rocky S slope, La Vinata Romero, 3725 feet, Broder 808; gentle S slope 1 km W of Portezuelo de Jamau, 1250 m, M20929 (det. by L. Constance), 21222; Portezuelo de Jamau, 1300 m, M23283; 1 km W of El Alamito, 1120 m, M23250; 2 km S of Portezuelo de Jamau, 1450 m, M21244; 2.5 km NW of Cerro Jamau, 1325 m, M23279. No report seen for the Sierra Juárez; otherwise, north central Baja California, from near El Ciprés to Las Palomas.

The plant of the southern Sierra Juárez, well isolated from typical S. deserticola, may be considered a weakly distinguished northern subspecies, differing in flower color and leaf texture. So far as seen, the flowers are yellow in the northern plant, purplish red in the southern—though Shan and Constance (1950) found flower color inconstant in the closely related S. bipinnatifida Dougl. The difference in leaf texture is evident in all my herbarium specimens: the leaves of the typical form press out beautifully flat, whereas the slightly thicker ones of the northern form always look a little crumpled. The two show about the same range of variation in leaf form, though with perhaps a slight tendency for broader petiole and rachis in the northern plant.

Typical S. deserticola is chiefly a plant of the central desert, at ca. 100 to 700 m (Raven and Mathias, 1960); but the northernmost collection (E of El Ciprés, 600 m, M19436) is from chaparral. The Sierra Juárez plant occurs at the lower levels of Pinus quadrifolia Parl., at ca. 1100 to 1450 m. The areas of the two, as now known, are about 135 km apart.

GARRYA GRISEA Wiggins. S of El Progreso, 1550 m, M21274; Arroyo Calabozo, 1600 m, M13488½; S base of Cerro Prieto, 1600 m, M18122; Cerro el Saiz, 1775 m, M20957. Previously reported only from the Sierra San Pedro Mártir but occurring also southward: Cerro Chato, M11107; Cerro Matomí, M20772, 20781; Cerro la Sandía, M11531; Cerro Azufre, M11639 &c.; Volcán las Tres Vírgenes, M11665 &c.

EVOLVULUS SERICEUS Benth. (var. discolor [Benth.] A.Gray). Open rocky ground at S base of Cerro Prieto, 1600 m, M18119; edge of Jeffrey pine forest 6.5 km N of Rancho Viejo, 1550 m, M18904. No clear record seen for Baja California; otherwise, Arizona to Florida and Argentina.

Shreve and Wiggins (1964: 1140) noted that van Oostroom cited a collection by Orcutt from "California, Colorado Desert, San Diego County, Santa Catarina Mission, Sept. 1889". However, there is no such place in San Diego County, and the plant is otherwise unknown from Alta California. Since Orcutt (1889) mentioned spending most of September in Baja California, and since the last cited collection shows the plant to occur in the Sierra Juárez within 20 km of ex-Misión Santa Catarina, Orcutt's collection would seem to be from (near) this Santa Catarina.

ALLOPHYLLUM GILIOIDES (Benth.) A. & V. Grant. Along dry stream bed with occasional seep areas, 1.5-2.5 miles upstream from El Rincón, 4100 feet, *Broder 725* (det. by Alva Day); a few depauperate plants on steep N slope at foot of volcanic cliffs 5 km NE of El Rincón, 1375 m, *M21260*; one in sandy arroyo bed, Mesa Laguna Seca, 1450 m, *M23629*. No report seen for peninsular Baja California; otherwise, southern and central California, Guadalupe Island, and Arizona.

TURRICULA PARRYI (A.Gray) Macbr. A few seedlings in dry sandy soil of burn (no old plants seen), flat silty valley with *Artemisia tridentata*, Mesa Laguna Seca, 1450 m, *M23626*. No report seen for the Sierra Juárez; otherwise, southern California and Sierra San Pedro Mártir (Brandegee, 1893). This is the first I have seen of this plant in Baja California.

CRYPTANTHA DECIPIENS (M.E.Jones) Heller. Alluvium at Agua Colorada, 1 mile NE of Santa Catarina, *Broder 696* (det. by E.R.Chandler). No report seen for Mexico; otherwise, San Diego County, California, to Nevada and Arizona.

CRYPTANTHA HOLOPTERA (A.Gray) Macbr. Arroyo bed, Toruno Canyon, 400 m, *M14847* (det. by Francia Hommersand). No report seen for Mexico; otherwise, SE California and W Arizona.

CUCURBITA DIGITATA A. Gray. Near La Huerta, 950-1000 m, *M13538, 16634*; 3 km S of La Cienega, 1200 m, *M18081*; Rancho Viejo, 1025 m, *M18656*; El Alamito, 1175 m, *M13688*. Also, Broder (1963) cited a specimen from near Santa Catarina. No other report seen for Baja California; otherwise, southern California to New Mexico and Sonora.

BIDENS LEPTOCEPHALA Sherff. Large colony under junipers ca. 2 km W of Portezuelo de Jamau, 1275 m, *M18637*; not seen elsewhere. No report seen for northern Baja California; otherwise, Arizona and New Mexico to Chihuahua and southern Baja California.

BRICKELLIA OBLONGIFOLIA Nutt. sens. lat. Locally common on schist, Agua Flores, 1125 m, *M18660*. No report seen for Mexico; otherwise, British Columbia and Montana to SE California and New Mexico. This collection agrees well with var. *linifolia* (D.C. Eaton) A.Gray and var. *oblongifolia*, except that the achenes are glabrous. The var. *linifolia* occurs as far south as Riverside County, California, about 200 km N of Agua Flores.

DYSSODIA PENTACHAETA var. BELENIDIUM (DC.) Strother. Scarce, 1 km W of Portezuelo de Jamau, 1250 m, M21223. No report seen for the Sierra Juárez; otherwise, Nevada to Coahuila, SE California, and north-central Baja California; also Argentina.

HAPLOPAPPUS JUAREZENSIS Moran. This species still is known only from the southern half of the Sierra Juárez, but the known range is extended to Cerro Taraizo, southernmost peak of the Sierra (M22986), and upward to 1900 m at Cerro Jamau (M21230).

SANVITALIA ABERTII A.Gray. Portezuelo de Jamau, 1300 m, M13667; peak 3 km SE of Portezuelo de Jamau, 1600 m, M18615; El Alamito, 1175 m, M18643; seen about from 1150 to 1750 m. No report seen for Baja California; otherwise, SE California to Texas, Sonora, and Chihuahua.

VERBESINA PALMERI S. Wats. Arroyo Grande, 1200 feet, Jaeger in 1960 (SD), 610 m, M21486. No record seen for the Sierra Juárez; otherwise, the Sierra San Pedro Mártir (Chambers, 1955) to east central Baja California.

VIGUIERA ANNUA (M.E.Jones) S.F.Blake. Portezuelo de Jamau, 1300 m, M13645, 18634. No report seen for Baja California; otherwise, Arizona to Texas, Sonora, and Chihuahua.

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